FOR MORE INFORMATION

To learn more about the study, visit our Web site at: **www.nww.usace.army.mil/wwrbasin**. Links to other information include CTUIR and others. If you wish to be added to the mailing list, contact the study's environmental compliance coordinator, Mr. James "Red" Smith, telephone 509-527-7244. Check back regularly for study updates, upcoming meetings, and new material. Comments may be submitted through the Web site or you may mail your comments to:

U.S. Army Corps of Engineers
Walla Walla District
Environmental Compliance Section
Attn: WWRBFS
201 North Third Avenue

Study Milestones

☑	Scoping of Public Issues	Fall 2002
☑	Initiate Stakeholder Meetings	Spring 2003
☐	Restoration Measures Evaluation	Spring/Summer/Fall 2004
☐	Completion of Study	2006

☑ = *Task completed*

US Army Corps of Engineers®
Walla Walla District

Walla Walla River Basin Feasibility Study

Confederated Tribes of the Umatilla Indian Reservation

November 2003 **NEWSLETTER NO. 2**

The U.S. Army Corps of Engineers (Corps) and Confederated Tribes of the Umatilla Indian Reservation (CTUIR) are studying the feasibility of improving the aquatic environment in the Walla Walla River Basin. The study is focusing on increasing in-stream flows.

STUDY UPDATE

By Chris Hyland,
Corps, Project Manager
for the Study

This newsletter provides an update on the Walla Walla River Basin Feasibility Study. The study has been in progress for more than a year. Our goal is to restore quality fish habitat by increasing in-stream flows. Public interest in this project has grown, and we have increased our efforts to reach the public. We are using public comments to guide the study process.

Our efforts this past year have been on identification and evaluation of measures that might increase in-stream flows. The measures being investigated are: water storage, water exchange, irrigation efficiency, and water right acquisition. Aquifer recharge may be investigated. These measures have the potential to provide the greatest and most immediate improvements to in-stream flows. Other measures might also be considered.

In this newsletter, we focus on the water storage measure, provide updates on the other measures, and show changes to the schedule.

WATER STORAGE

The idea of water storage is to capture a portion of the river's flow. The water would be captured when flow is high and when it would not adversely affect aquatic habitat. The water would be stored in a reservoir (to be constructed) and released in two ways: (1) directly into the river or stream during low flows or (2) into agricultural irrigation systems when it is needed most. The need for taking water from the river or stream would be reduced if stored water were put into irrigation systems. Natural flows could remain in the river or stream.

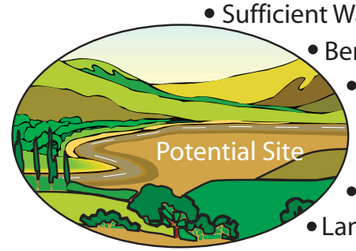
Stored water could be used early in the irrigation season and/or during summer low flow (critical periods for fish passage and juvenile rearing). For example, water provided directly as in-stream flow during the peak irrigation diversion season (July - October) could improve critical steelhead and salmon juvenile rearing habitat. The additional water could aid riparian growth, thus providing better rearing habitat. Natural flows remaining in the river would create higher flows to push steelhead and salmon smolts (juveniles) out to the Columbia River (April - July). These flows would attract adult spring Chinook salmon into the Walla Walla River.

A number of potential off-channel storage sites were identified during the scoping process, through map analysis, and from discussions with local residents. Various requirements must be met for a potential storage site to be considered. (See graphic below for Sample Storage Site Considerations.)

More than 45 sites in Oregon and Washington were examined for the possibility of storing water in the basin; 16 in Washington and 29 in Oregon. (See map at study Web site: www.nww.usace.army.mil/wwrbasin). This number of sites has been reduced to seven (all in Oregon) through the application of the screening criteria, including the storage considerations. The screening criteria included the potential for impacts to species listed under the Endangered Species Act and to fishery resources in general, as well as hydrologic capacity.

The seven sites are being ranked from most to least suitable. The two most suitable sites will be examined in greater detail. The same screening criteria will be used

Sample Storage Site Considerations



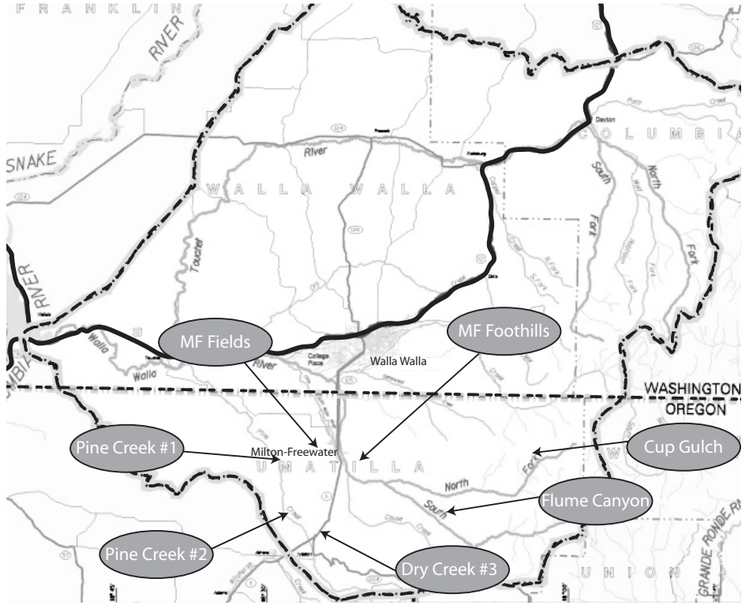
- Sufficient Water Supply
- Beneficial to the Environment
- Strategically Located
- Geologically Suitable
- Construction Cost
- Site Availability
- Landowner Sentiments
- Operation and Maintenance Cost

for other sites identified during the study. Our Web site has information on the characteristics of each site and "Frequently Asked Questions" about Water Storage. If you would like to receive a paper copy of this information, please call 509-527-7244 and provide your name and mailing address.

WATER EXCHANGE

We are evaluating eight water exchange options to improve flows for specific geographic areas. Water would be withdrawn from the Columbia River near the mouth of the Walla Walla River. The water would be moved to the Milton-Freewater, Oregon, area using gravity flow and/or pressurized pipelines. The water would be added to local irrigation systems for subsequent agricultural use. Water in an equal amount to that withdrawn from the Columbia River would not be withdrawn from the basin for agricultural application. Water allowed to remain in the basin would increase flows over a relatively broad geographic area. The Columbia River water could be diverted from the water exchange delivery system to various irrigation canal systems located in and near Milton-Freewater, Oregon, and the communities of Touchet and Lowden, Washington.

Columbia River exchange water would not be put directly in the river as "live flow." Biological cues prompt fish to move into rivers, streams, or tributaries in which they were hatched. Salmonids use olfactory stimuli, or the smell or "scent" of a river, to migrate back to the place of their birth. These are places where they are genetically adapted or "imprinted" to the environmental conditions and cycles most productive to support their population. Introduction of Columbia River exchange water directly into the surface waters of the Walla Walla River Basin would modify those existing cues. Salmon and steelhead that would typically be drawn to other rivers or streams could become disoriented and enter the Walla Walla River.



Potential off-channel storage sites.

The study is also investigating four possible options for in-river exchange. Water could be withdrawn from the Walla Walla River, transported upstream through a combination of gravity fed, open canals or pressurized pipeline, and reintroduced back into the Walla Walla River. This in-river exchange would compensate for irrigation withdrawals. Flows would be increased at certain times and specific locations at a potentially reduced cost. This option might be used in combination with, or in lieu of, the Columbia River exchange option and/or water storage reservoirs. Possible in-stream exchanges might involve Burlingame Diversion, near Lowden, Washington, and the lower Touchet River. Investigation of these options continues. Preliminary results show the highest biological benefit when water is delivered to the highest point in the irrigation system (Milton-Freewater, Oregon). The biological benefit would be due to increased in-stream flows and the resulting improved habitat.

IRRIGATION EFFICIENCY

Improving conveyance systems and application methods could reduce the demand for irrigation water from surface and groundwater sources. Water quantities equal to the losses could remain as in-stream flows or as groundwater. Some water remaining in the ground could end up as surface flows in the basin.

Options being investigated include: lining or piping open irrigation canals that have excessive seepage losses; consolidation of multiple inefficient canals into fewer, more efficient canals; and conversion of inefficient crop application methods (e.g., flood irrigation) to more efficient methods such as sprinkler or drip irrigation.

Most of the irrigation canals in the Walla Walla River Basin are unlined, earthen canals. Many have significant seepage rates. For some, less than half the water diverted makes it to the point of application. Seepage rates are being measured in several canals to determine the quantity of water that could be saved and left in-stream.

Consolidation of canals could result in less seepage. Lining and piping of consolidated canals could also increase irrigation efficiencies. We are investigating possible candidates for consolidation.

In the Milton-Freewater, Oregon, area, we are studying improved application methods that could lessen the demand for surface and groundwater withdrawals.

We are also studying the potential effect of efficiencies upon adjacent groundwater and groundwater users. This includes the potential need for groundwater recharge.

WATER RIGHTS ACQUISITION

Water rights or long-term leases for water rights could be acquired from willing landowners. This water would remain as either in-stream flow or groundwater.

Washington Water Trust (WWT) and Oregon Water Trust (OWT) are working with the CTUIR to map out water rights that could help improve habitat. The WWT and OWT will propose "tools" to acquire water from willing sellers. They will develop methods for assigning value to water rights.

The WWT and OWT are presently developing models for potential water acquisition. These are based on Geographic Management Units (GMUs) established for the Bonneville Power Administration's subbasin planning effort. Currently, the WWT and OWT are not looking at individual water rights, but at the potential for acquisition. They are determining the number and seniority of water rights, stream and fish needs as determined by the CTUIR and others, and community and potential economic impacts to the stream and the community within the individual GMUs. Once the models have been developed, they will develop strategies for using water right acquisition to improve in-stream flow.

The WWT and OWT held two public meetings, one in Milton-Freewater, Oregon, and one in Walla Walla, Washington, in the summer of 2003. The purpose was to discuss their process for developing a water acquisition strategy and to receive input. Additional meetings are planned for November 2003.

SHALLOW AQUIFER RECHARGE

This measure is being considered for addition to the array of measures being investigated. Water could be captured during high runoff periods, transported to selected out-of-channel locations, and then added to the ground.

The porous soils of the Walla Walla Valley were once naturally recharged by a river system that had multiple meandering channels. Today, much of the Walla Walla River is channelized, which reduces over bank flooding. High runoff is not allowed to spread and recharge ground water supplies.

Addition of water to the underground shallow aquifer might increase the flow of cool groundwater into streams, thereby, enhancing fish habitat.

SCHEDULE

Congress reviews projects such as the Walla Walla River Basin Feasibility Study for potential construction authorization. Only after Congress authorizes a project and provides funding (two separate processes) can construction begin.

The original study schedule called for completion in time for review during Congress' 2004 Session. However, through working with basin stakeholders, it became apparent that more time was needed to evaluate the measures. The Corps and CTUIR are negotiating a new schedule calling for completion of the study in time for consideration by Congress during their 2006 session. We will share the results of this effort in our next newsletter.

BASELINE STUDIES

We are conducting baseline studies of existing conditions for *surface water (water budget), groundwater, water quality, and biological communities*. Potential effects of each alternative will be compared to the existing conditions to help predict beneficial and adverse impacts.

A *water budget* defines how much and where streamflows are being used, diverted, lost, and conserved. The *water budget* baseline study focuses on three components: hydrology, groundwater, and hydraulics.

A *hydrological model* of the basin is being developed. It will be used to quantify, track, and predict flows at the proposed alternatives.

Groundwater data is being gathered to be used with studies conducted by the Walla Walla Basin Watershed Council. These studies will show the surface water/groundwater interactions in the hydrology model.

A *hydraulic model* of the Walla Walla River from Milton-Freewater, Oregon, to Touchet, Washington, has been developed and will be updated. It will use flow data to analyze existing and proposed conditions for flow, depth, and velocity.

Water quality baseline data has been collected from existing sources. The data will be used to assess limiting factors for fish habitat quality.

Biological baseline studies are compiling existing information and collecting monitoring data. These will add to existing data on natural spawning, rearing, migration, survival, age, and growth characteristics. Existing data on life histories of adult steelhead and their natural progeny in the Walla Walla and Touchet Rivers, and Mill Creek, will also be enhanced.

We are also evaluating the effects of *flow levels, irrigation diversions, and flood control structures* upon passage and potential delay of adult steelhead and bull trout. Radio telemetry and physical inspections are being used.